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ART UNIT	PAPER NUMBER
4172	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/713,348	CAGAN, CHRISTOPHER L.
Office Action Summary	Examiner	Art Unit	
	JOHN D. SCARITO	4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _11/14/2003_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-41_ is/are pending in the application.
   4a) Of the above claim(s) _17 duplicate_ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-41_ is/are rejected.
7)☒ Claim(s) _1,3,16,17,22-26,31 and 38-41_ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a)☐ All   b)☐ Some * c)☐ None of:
   1.☐ Certified copies of the priority documents have been received.
   2.☐ Certified copies of the priority documents have been received in Application No. _____.
   3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _11/14/2003 & 6/26/2007_.
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Preliminary Amendment Objection

Examiner notes receipt of Applicant's preliminary amendment of August 18, 2005. Per the amendment, Applicant declared that no new matter was added. However, the amendment is objected to under 35 U.S.C. 132(a) because Examiner suspects that it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is suspected as not supported by the original disclosure is as follows:

Per Claim 23, Examiner has not found support in Applicant's specification as filed which supports calculating the price ratio data "using the historic sales data **of the subject property** and the historical sales data **of a plurality of properties**". Examiner only finds support for calculating the price ratio data " using the valuation history **for the subject property** and the historical sales data **for the subject property**" [page 3, lines 23-24 & page 18, lines 13-14, emphasis added].

Applicant is required to cancel any new matter in the reply to this Office Action. Further, per Claim 36, the "digital" limitation is not supported in the specification as originally filed.

Status of Claims

Claims 1-41 are pending in the current application. Applicant added new Claims 23-41 and withdrew duplicate claim 17 listed in his/her original Claims 1-22.

Claim Objections

Claims 1, 3, 16, 17, 22-26, 31, & 38-41 are objected to because of the following informalities:

Appropriate correction is required.

1. As per Claim 1, Examiner suggests that Applicant state "valuation history data" in the first computing step in lieu of "valuation history" for consistency in term use. Further, for purposes of examination, Examiner will assume that Applicant is referring to "real" property when he/she states "the subject property" and "property". Examiner suggests clarification.

2. As per Claim 3, Applicant states "sales data" without an indication of whether he/she is referring to "the historical sales data" or the "sales prices".

3. As per Claims 16 & 17, said claims are objected to under 37 CFR 1.75 as being substantial duplicates of Claims 10 and 12 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k). This objection would have also been made given withdrawn Claim 17 in view of Claim 14, however, such objection is moot in view of Applicant's withdrawal.

4. As per Claim 22, said claim is objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 1. These claims cover the same thing despite a slight difference in wording. Here, Examiner asserts that "fraud in a....valuation"

would be an "anomalous valuation." Further, one of skill in the art would appreciate that the sale of a home would be "a valuation-generating event" which would include a "price". Likewise, "valuation history data" comprises a "valuation history data set" and likely has associated prices and dates.

  a. Further, Examiner suggests that Applicant state "said subject real property" in lieu of "said subject property" for consistency and clarity.

  b. "the date" lacks antecedent basis in the first obtaining step

  c. Examiner suggests that Applicant state "the valuation history data set" in the first computing step for consistency and clarity.

5. As per Claim 23, "the geographic area" lacks antecedent basis. Further, "the historic sales data" and "the historical sales data" also lacks antecedent basis. For purposes of examination, Examiner will assume that Applicant meant "historic sales prices". Lastly, "a plurality of properties" of the computing step already holds antecedent basis in the accessing step.

6. As per Claim 24, said claim is objected to under 37 CFR 1.75 as being a substantial duplicate of Claim 1. These claims cover the same thing despite a slight difference in wording. Here, Examiner asserts that "fraud in a....valuation..of a subject [] property" would be a "distorted valuation of a subject property." Further, one of skill in the art would appreciate that the steps of both claims require the evaluation of historic sales prices of properties (e.g. subject property and other properties), the computation of a price ratio, and the computation of a distortion index based on the price ratio data.

7. As per Claim 25, said claim is objected to under 37 CFR 1.75 as being a

    substantial duplicate of Claim 2. These claims cover the same thing despite a

    slight difference in wording. Here, Examiner asserts that "fraud in

    a….valuation..of a subject [] property" would be a "distorted valuation of a

    subject property." Further, one of skill in the art would appreciate that the steps

    of both claims require the evaluation of historic sales prices of properties (e.g.

    subject property and other properties), the computation of a price ratio, the

    computation of a distortion index based on the price ratio, and comparison of the

    distortion index to an allowable distortion index. The fact that Claim 25 omits

    "said mortgage application specifies a requested value of the subject real

    property", is immaterial.

8. As per Claim 26, "said distorted valuation history data" lacks antecedent basis.

    Further, said claim is objected to under 37 CFR 1.75(c), as being of improper

    dependent form for failing to further limit the subject matter of a previous claim.

    Applicant is required to cancel the claim(s), or amend the claim(s) to place the

    claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

    Here, the claim is circular (e.g. "using the historic sales data of the subject

    property and the historical sales data of [] properties [] to detect distorted

    valuation" versus "distorted valuation [] obtained by using the historic sales data

    of the subject property and historic data of properties").

9. As per Claim 31, in line with the Claim 25 objection above, said claim is objected

    to under 37 CFR 1.75 as being a substantial duplicate of Claim 15. Examiner

asserts that the fact that the "mortgage application specifies a requested value of the subject real property" is irrelevant given that the method, as written, does not use this for anything but merely presents it as extraneous data.

10. As per Claim 38, said claim is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Here, the claim is circular (e.g. "distortion index based on the price ratio data to detect the distorted valuation of the subject property" versus "distorted valuation of said subjected property is detected by computing a distortion index based on said price ratio data")

11. Applicant is advised to consider the possibility of additional duplicate claims.

12. As per Claims 38-41, Examiner suggests that Applicant refer to "the computer readable medium" in lieu of "the invention" in said claim preambles.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 2, 6-9, 11, 13, 15, 19, 22, 23, 25-30, 33 & 37 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As per Claim 1, Examiner is unclear whether Applicant intended to depend upon said claim's preamble for antecedent basis. For instance, "the subject real property" and "the computer system" lack alternative reference. Further, "the mortgage" in the preamble lacks antecedent basis. Lastly, if Applicant intended said preamble to have weight, the use of "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d). Further, Examiner is unclear how "sales prices" differs from "historical sales data". Both are "in a geographic area in which the subject real property is located". Next, Applicant states "property" in the first computing step without reference. This could refer to "subject real property", "the subject property", "a plurality of real properties" or Applicant could be introducing other property which is not even real property. Lastly, "the historical sales data for the subject property" lacks specific antecedent basis. Examiner will interpret, for purposes of examination, that "the historical sales data for the subject property" is included in the "historical sales data for property". Further, the use of *other* "historical sales data for property" in the method is not supported in the claim as filed.

As per Claims 2, 11, 13, 15, , Examiner is unclear how a "mortgage application specifies a *requested* value of the subject real property". Applicant states that said mortgage application could be "for purchase, loan, or refinance". As such, one of skill in the art is likely to interpret this as being the requested amount for purchase, loan or refinance. This "amount" could be a completely different amount than the "value of the subject real property". Further, this could be related to the "claim of valuation". Further, with regard to Claim 15, Examiner suspects that Applicant intended to depend from Claim 14.

As per Claim 6, Examiner is unclear whether "sales history data" is equivalent to "historical sales data" as used in Claim 1.

As per Claims 7-9, Applicant states "sales of property". Examiner is unclear whether Applicant is referring to "sales prices...of a plurality of real properties" or is trying to introduce a "property" that comprises something different than the "plurality of real properties in a geographic area in which the subject real property is located". Further, "Zip code", "postal city or situs city" and "county" lack antecedent basis.

As per Claim 19, Examiner is unclear whether Applicant is referring to "historical sales data for property" in the obtaining step or "the historical sales data for the subject property" or both when "reporting said historical sales data.

As per Claims 25, 28, 29 & 30, Examiner suspects that Applicant intended to depend from Claim 24 in lieu of Claim 23. Otherwise, "said distortion index" lacks antecedent basis.

As per Claim 26, Examiner is unclear whether Applicant is referring to "the historical sales data of a plurality of properties" of Claim 23, by stating "historic data of properties" or if he/she is attempting to introduce a different "historic data of properties".

As per Claim 27, Examiner is unclear whether Applicant is referring to "the historic sales data of the subject property" or "the historical sales data of a plurality of properties" or both when obtaining "said historic sales data."

As per Claim 33, Examiner is unclear whether Applicant is referring to "historical sales data of the subject property" or "historical sales data of a plurality of properties" or both when "reporting said historical sales data.

As per Claims 1, 22, 23, & 37, Applicant is unclear whether the "computing price ratio data' merely uses the forms of data that follow (valuation history for the subject property, historical sales data for the subject property, historic sales data of the subject property, historical sales data of a plurality of properties) or whether he/she is actually using one as the numerator and the other as the denominator in each the "price ratio".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 18, 19, 22-27, 32, 33, 37 & 38 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Combination A**: Cole I (10/056,391) [Pub. No.: 2002/0133371] in view of

Foretich et al (10/107,267) [Pub. No.; 2003/0191723].

As per Claim 1, Cole I ('391) teaches the method as follows:

A method of detection of fraud [Abstract, "fraud prevention" & "search for any abnormal

situation"] in a claim of valuation, such as an appraisal *or a mortgage application* for purchase, loan, or

refinance of a subject real property to be used as collateral for the mortgage [paragraph 11,

"information on the mortgage application", e.g. claim of valuation is inherent & ""real

property is presented as collateral" & paragraph 2, "loan funds secured by a mortgage"],

using a computer system [paragraph 11, "computer system"], the method comprising the steps of:

maintaining a database of sales prices in the computer system of a plurality of real properties [see

paragraph 11] in a geographic area in which the subject real property is located [see paragraphs 26

& 29, "each market" & incoming transactions scrutinized in database "against a backdrop

of independent market data" & paragraph 31, "geographic neighborhood"]

obtaining from the computer system valuation history data for the subject property; [see paragraph 28,

information of each real property including "valuation data" & paragraph 67, "declared

value" from multiple queries" retained]

However, Cole I ('391) does not specifically disclose:

obtaining, using the computer system, historical sales data for property in the geographic area in which the subject real property is located. Nevertheless, Cole I ('391) <u>does</u> disclose the availability of such data and its use to "filter out sales that are inconsistent with a geographic neighborhood". [see paragraph 11, "database...[with] data regarding a plurality of real properties, the data including...historical market activity associated with each real property" & paragraph 99. Further, Examiner notes that "the subject property" is, on its face, a "property in the geographic area in which the subject real property is located".] Regardless, Foretich et al ('723) "access[ing] databases as necessary for comparable data" [Abstract]. As such, it would have been obvious to one of ordinary skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to include obtaining historical sales data for property in the geographic area in which the subject real property is located. One would have been motivated to do so, given that comparables are commonly used as a basis in commerce to value items of interest.

computing price ratio data using the valuation history for the subject property and the historical sales data for the subject property in the geographic area in which the subject property is located. Nevertheless, Cole I ('391) <u>does</u> disclose the importance of computed ratios in the mortgage industry. [see paragraph 77, "loan-to-value (LTV) ratio" & paragraph 101 "actual sales amount to the property value [STV]". Examiner notes that these, on their face, are "price ratio data" and one of skill in the art would appreciate that said LTV or STV could be calculated utilizing any derived "value" of the property (e.g. from valuation history for the subject property and/or the historical sales data for the subject property and/or the valuation history/historical sales data for any comparable property)]. As such, it would have been

obvious to one of ordinary skill in the art, at the time of Applicant's invention, to modify

Cole I ('391) to include computing price ratio using the valuation history for the subject

property and the historical sales data for the subject property in which the subject

property is located. One would have been motivated to do so given that ratios (or

percentages) are a known way normalize/standardize data to assess information. For

Example, Cole I ('391) portrays the use of ratios to reduce all sales and values figures (for

many comparable properties) down to one manageable number (through SVT) [paragraph

101].

computing a distortion index based on the price ratio data to detect fraud in the mortgage application.

Nevertheless, Cole I ('391) <u>does</u> teach sorting a list of ratio data (e.g. index) and

calculating a "relative difference between [] records" (e.g. percentage difference) [see

paragraph 104]. Cole I ('391) further discloses using limits derived from the index to

"determine whether a particular sale is consistent with market activity within a specific

neighborhood, specific to the property type." As such, it would have been obvious to one

of ordinary skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to

include computing a distortion index based on the price ratio data to detect fraud. One

would have been motivated to do so given that mathematical anomalies or outliers are

commonly visually inspected in plots/tables when assessing data points. Examiner notes

that Applicant never defined "distortion index" in his/her specification. As such,

Examiner will interpret this to be a "listing" of reference data (e.g. index) that indicates

values out of proportion to other values (e.g. distorted).

As per Claim 2, Cole I ('391), as modified, teaches the method of Claim 1 above.

Further, Cole I ('391) teaches said mortgage application specifies a requested value of the subject real

property [paragraph 35, "declared market value" & paragraph 24, "requested loan amount".

Examiner notes that the "requested value of the subject real property" may differ from the

"loan amount", however, one of skill in the art would appreciate that when one uses real

property as collateral (mortgage), he/she is attesting that said collateral would at least

meet or exceed said loan amount.] and said distortion index is compared to a predetermined

allowable distortion index to detect fraud in the mortgage application. [Cole I ('391) teaches that

"ratios" and "relative differences" are compared to a predetermined standard of

acceptable exposure (50% vs. 80% LTV or 2% relative difference, see paragraphs 77 &

108), which are both aimed toward establishing consistent market activity for the

detection of inconsistent/unrealistic market activity (paragraph 108)].

As per Claim 3, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said valuation history data is obtained by

using sales data for the subject property. Regardless, Cole I ('391) does disclose "historical

market activities of each real property" comprising "historical sales-related data" which

"includes information on each real property...[such as] estimated property value [and]

amount difference between the current sale and the most recent sale" [see paragraphs 33

& 34]. As such, it would have been obvious to one of ordinary skill in the art, at the time

of Applicant's invention, to modify Cole I ('391) to include said valuation history data as

being obtained/derived using sales data. One would have been motivated to do so given

that the sale records are practical evidence what the actual value of the property was at

the time of the sale. For instance, if one utilized only sale price, this may not take into

account someone paying over the house's value (e.g. negative equity= the "estimated

value" did not increase as much as the "difference between the current sale and the most

recent sale price") and would not be as true to actual value at that time.

As per Claim 4, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said valuation history data is obtained

using an automated valuation model. Regardless, Cole I ('391) does teach the use of an AVM

to derive a property value. [see paragraph 31]. As such, it would have been obvious to

one of ordinary skill in the art, at the time of Applicant's invention, to modify Cole I

('391) to include valuation history data as obtained via an AVM. One would have been

motivated to do so given AVMs are merely complex systems that utilize a "large

database of property and sales related information" [paragraph 32] to output a value.

Here, one of skill in the art would appreciate that large databases of historical information

could be utilized to compute historical values. What one can do with current data, one

can do with past data.

As per Claims 18 & 19, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose reporting said (price ratio data or historical

sales data). Regardless, Cole I ('391) does disclose that mortgage applications are

processed "to determine whether any red flags [] should be reported back to the

lender/client." As such, it would have been obvious to one of ordinary skill in the art, at

the time of Applicant's invention, to modify Cole I ('391) to include the reporting of said

price ratio data, historical sales data, or any data which supports a finding or abnormality

in the data. One would have been motivated to do so given that "any pattern of data

[appearing fraudulent] can occur in legitimate circumstances". [paragraph 65]. As such,

lenders can utilize the underlying data or computations based on that data as objective

evidence of their lending opinions. Reporting said data "offers a unique and valuable

additional toolkit for financial institutions or mortgage lenders." [paragraph 65].

As per Claim 22, Examiner directs Applicant to the Objection listed above. As such,

Claim 22 is rejected under most of the same contentions of Claim 1 above.

As such, Cole I ('391) teaches the method as follows:

A method of using a computer system [paragraph 11, "computer system"] to detect anomalous

valuations in a real property transaction involving a subject real property [Abstract, "search for any

abnormal situation therein, which may constitute a potential mortgage fraud scheme" &

paragraph 7, "inflated values" from "flipping properties"], comprising the steps of:

maintaining in the computer system a database of valuation-generating events for a plurality of real

properties in a geographic area in which the subject real property is located [see Claim 1, Examiner

notes that a sale of property is a "valuation-generating event", see paragraph 67], for said

subject property, obtaining a subject property record set including a price of said property and the date

thereof for at least one valuation-generating event; [see paragraph 34, "sale price", "date of sale"]

obtaining from the computer system a valuation history data set for said subject property, comprising prices

and the dates thereof for a plurality of timepoints; [see paragraph 28, "valuation data", paragraph

31, current "AVM" and "tax assessment" data, paragraph 67, "application...declared

value" data when those applications were filed],

However, Cole I ('391) does not specifically disclose:

obtaining, using the computer system, historical sales data for property in the geographic area in which the subject real property is located, [see Claim 1 above] computing price ratio data using the valuation history for the subject property and the historical sales data for the subject property in the geographic area in which the subject property is located, [see Claim 1 above] and computing a distortion index based on the price ratio data to detect an anomalous valuation of the subject real property. [see Claim 1 above and Abstract, "search for any abnormal situation therein, which may constitute a potential mortgage fraud scheme" & paragraph 7, "inflated values" from "flipping properties"]

As per Claim 23, Cole I ('391) teaches the method as follows: A method of detecting a distorted valuation of a subject property [Abstract, "search for any abnormal situation therein, which may constitute a potential mortgage fraud scheme" & paragraph 7, "inflated values" from "flipping properties"] using a computer system [paragraph 11, "computer system"], the method comprising the steps of: accessing a database of historic sales prices for a subject property and of a plurality of properties [paragraph 28, "database contains all information regarding a number of real properties...includ[ing] ...historical sales data associated with each real property", Examiner notes that one of ordinary skill would appreciate that the computer will access the data.] located in the geographic area of the subject property[see paragraphs 26 & 29, "each market" & incoming transactions scrutinized in database "against a backdrop of independent market data" & paragraph 31, "geographic neighborhood"];

However, Cole I ('391) does not specifically disclose computing price ratio data using the historic sales data of the subject property and the historical sales data of a plurality of properties located in the geographic area of the subject property to detect a distorted valuation of the subject property.

Nevertheless, Cole I ('391) does disclose the importance of computed ratios in the

mortgage industry. [see paragraph 77, "loan-to-value (LTV) ratio" & paragraph 101

"actual sales amount to the property value [STV]". Examiner notes that these, on their

face, are "price ratio data" and one of skill in the art would appreciate that said LTV or

STV could be calculated utilizing any derived "value" of the property (e.g. from the

historic sales data of the subject property and/or the historical sales data of a plurality of

properties located in the geographic area of the subject property (e.g. comparable

properties "of the geographic neighborhood" paragraph 99.)]. As such, it would have

been obvious to one of ordinary skill in the art, at the time of Applicant's invention, to

modify Cole I ('391) to include computing price ratio data using the historic sales data of

the subject property and the historical sales data of a plurality of properties located in the

geographic area of the subject property. One would have been motivated to do so given

that ratios (or percentages) are a known way normalize/standardize data to assess

information. For Example, Cole I ('391) portrays the use of ratios to reduce all sales and

values figures (for many comparable properties) down to one manageable number

(through SVT) [paragraph 101].

As per Claim 24, Cole I ('391), as modified, teaches the method of Claim 23 above.

However, Cole I ('391) does not specifically disclose the distorted valuation of said subject

property is detected by computing a distortion index based on said price ratio data. Nevertheless, Cole

I ('391) does teach sorting a list of ratio data (e.g. index) and calculating a "relative

difference between [] records" (e.g. percentage difference) [see paragraph 104]. Cole I

('391) further discloses using limits derived from the index to "determine whether a

particular sale is consistent with market activity within a specific neighborhood, specific

to the property type." As such, it would have been obvious to one of ordinary skill in the

art, at the time of Applicant's invention, to modify Cole I ('391) to include computing a

distortion index based on the price ratio data to detect distorted valuations. One would

have been motivated to do so given that mathematical anomalies or outliers are

commonly visually inspected in plots/tables when assessing data points. Examiner notes

that Applicant never defined "distortion index" in his/her specification. As such,

Examiner will interpret this to be a "listing" of reference data (e.g. index) that indicates

values out of proportion to other values (e.g. distorted).

As per Claim 25, Cole I ('391), as modified, teaches the method of Claim 24 above.

Further, Cole I ('391) teaches said distortion index is compared to a predetermined allowable

distortion index to determine the distorted valuation of the subject property. [Cole I ('391) teaches that

"ratios" and "relative differences" are compared to a predetermined standard of

acceptable exposure (50% vs. 80% LTV or 2% relative difference, see paragraphs 77 &

108), which are both aimed toward establishing consistent market activity for the

detection of inconsistent/unrealistic/distorted market activity (paragraph 108)]

As per Claim 26, said Claim is rejected on the same grounds as Claim 23 above. Here,

Examiner notes that "historic data of properties located in the geographic area of the

subject property" comprises "historical sales data of a plurality of properties located in

the geographic area of the subject property". See Claim 26 objection above.

As per Claim 27, Cole I ('391), as modified, teaches the method of Claim 23 above.

However, Cole I ('391) does not specifically disclose said historic sales data is obtained using an

automated valuation model. Regardless, Cole I ('391) does teach that AVMs utilize "large

databases of property and sales related information". [paragraph 32]. As such, it would

have been obvious to one of ordinary skill in the art, at the time of Applicant's invention,

to modify Cole I ('391) to include historic sales data as obtained via an AVM. One

would have been motivated to do so given that AVMs derive property values based on

such data. [see paragraph 31]. As such, one would have been motivated to go to the

source of the underlying data, if credible, in lieu of deriving their own data at a huge

expense of time and money.

As per Claims 32 & 33, Cole I ('391), as modified, teaches the method of Claim 23

above. However, Cole I ('391) does not specifically disclose reporting said (price ratio data or

historical sales data). Regardless, under the logic of Claims 18 & 19 above, said claim

would be an obvious variant of Cole I ('391).

As per Claim 37, Cole I ('391), as modified, teaches the method of Claim 24 above.

Further, the computer system [paragraph 11] of Cole I ('391) inherently contains some

form of computer readable medium. As such, it would have been obvious to one of

ordinary skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to

include a computer readable medium housing instructions that when executed by a

processor would cause the processor to perform the method of Claim 24. One would

have been motivated to do so given that one is likely to utilize the tools available to him

to create efficiencies in data processing and to avoid mistakes.

As per Claim 38, said Claim is rejected on the same grounds as Claim 37 above. Here,

Examiner notes that Claim 38 duplicates "computing a distortion index based on said

price ratio data" to detect "the distorted valuation". See Claim 38 objection above.

Claims 20, 21, & 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Combination A in view of Official Notice.

As per Claim 20, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said price ratio data is computed

arithmetically by subtraction. Regardless, Cole I ('391) does disclose the subtraction of ratios

(STVs) to determine their difference. [see paragraph 105, see numerator]. Examiner

notes that Applicant is attempting to Claim the subtraction of two percentages or ratios.

[see Applicant's specification, page 11, lines17-18.] Here, Official Notice is taken that

the subtraction of numbers, percentages, etc. is old and well established in the art. As

such, it would have been obvious to one of ordinary skill in the art, at the time of

Applicant's invention, to modify Cole I ('391) to include the computation of price ratio

data by subtraction. One would have been motivated to do so to mathematically arrive at

a number that represents the objective difference between valuations.

As per Claim 21, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said price ratio data is computed

arithmetically by division. Regardless, Cole I ('391) does disclose the division of ratios in the

computation of a list of relative differences. [see paragraph 105]. Examiner notes that

Applicant is attempting to claim the division of two percentages or ratios. [see

Applicant's specification, page 12, lines 4-5]. Official Notice is taken that the division of

numbers, percentages, etc. is old and well established in the art. As such, it would have

been obvious to one of ordinary skill in the art, at the time of Applicant's invention, to

modify Cole I ('391) to include the computation of price ratio data by division. One

would have been motivated to do so to mathematically arrive at a number that represents

the objective inflation or deflation between valuations.

As per Claims 34 & 35, Cole I ('391), as modified, teaches the method of Claim 23

above. However, Cole I ('391) does not specifically disclose said price ratio data is computed

arithmetically (by subtraction or by division). Regardless, said Claims are an obvious variant of

Cole I ('391) as discussed in respective Claims 20 and 21 above.

As per Claim 36, Cole I ('391), as modified, teaches the method of Claim 23 above.

However, Cole I ('391) does not specifically disclose a digital computer system programmed to

perform the steps specified in the method of Claim 23. Regardless, Cole I ('391) does disclose a

computer system [paragraph 11]. Further, Official Notice is taken that "digital"

computers, as opposed to analog computers, are well known and established in the art.

As such, it would have been obvious to one of ordinary skill in the art, at the time of

Applicant's invention, to modify Cole I ('391) to include the method steps as specified in

Claim 23 as performed on a digital computer. One would have been motivated to do so

given that one is likely to utilize the tools available to him to create efficiencies in data

processing and to avoid mistakes.

Claims 5 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Combination A and further in view of Cole II (10/003,368) [Pub. No.:2002/0099650].

As per Claim 5, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said valuation history data is obtained by

using a hybrid of automated valuation models. Regardless, Cole I ('391) does disclose that

updated values (e.g. from original AVM use) "could be derived from an associated AVM,

which can be updated often, or even in 'real-time'". Further, Cole I ('391) teaches that

one could update the value using an alternative "tax assessment". Regardless, Cole II

('368) teaches the use of "a plurality of AVM systems, each of which provides

independent valuation data for the same property" [paragraph 39]. As such, it would

have been obvious to one of ordinary skill in the art, at the time of Applicant's invention,

to modify Cole I ('391) to include deriving valuation history data via a hybrid of

automated valuation models. One would have been motivated to do so given that data

changes over time and an AVM is only as good as the data it relies on [Cole II ('368),

paragraph 26]. This is the GIGO (garbage in, garbage out) philosophy well known in

computer science. As such, one would, as suggested by Cole II ('368), utilize multiple

AVMs to "enhanc[e] the reliability of the data [Cole II ('368), paragraph 39]. Also, one

could formulate a hybrid valuation by consulting tax assessment records. Here, not

unlike Claim 4 above, one of skill in the art would appreciate that large databases of

historical information could be utilized to compute historical values.

As per Claim 6, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said valuation history data is obtained by

using a combination of sales history data for said subject property and an automated valuation model

applied to said subject property. Regardless, under the logic of Claim 3 above, it would have

been an obvious variant of Cole I ('391) to utilize sales history data as valuation history

data. Further, Cole II ('368) teaches that "any single valuation of a specific property

[using and AVM] can be inaccurate". Since accuracy cannot be guaranteed [paragraph

27], Cole II ('368) suggests that AVMs need "additional measures" in addition to the

single value. [paragraph 28]. As such, it would have been obvious to one of ordinary

skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to include said

valuation history data as a combination of sales history data and an AVM calculation.

One would have been motivated to do so given the "uncertainty in any AVM valuation,

which is inherent in any mathematical prediction." [paragraph 25].

Claims 10-17, 28-31 & 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Combination A in view of Cole II (10/003,368) [Pub. No.:2002/0099650] and further in

view of Official Notice.

Note: Examiner will consider Claims 12-15 prior to Claims 10 & 11.

As per Claim 12, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said distortion index includes a spatial

distortion index. Regardless, Cole I ('391) does teach that its "invention requires that

information be analyzed within a geographic context." [paragraph 95] and that one must

look at the geographic neighborhood of the subject property [paragraph 98, by

"neighborhood code"] to determine if sales are consistent [paragraph 99]. Here,

Examiner notes that Applicant defines "spatial distortion" as "the amount that the subject

zip ratio exceeds the maximum of the entries in the column above it" [Applicant's

Specification, page 13, lines 8-9]. Practically, Applicant's "subject zip ratio" is merely

dividing two values (i.e. the subject property value divided by the median property value

of comparable properties in the zip code) to determine how inflated or deflated the

subject property is versus comparable properties. Official Notice is taken that this

mathematical practice is old, well-established and understood by those of skill in the art.

Given outliers and errors common in underlying data [see Cole II ('368), paragraph 25 &

26], one of skill in the art would also appreciate that medians be used in lieu of averages,

(e.g. which are skewed by outliers). In this vein, Applicant's comparison to the

maximum of the entries in the column above it does not appear new. Cole II ('368)

discloses that "if a property value is close to or more than the neighborhood historical

high, further scrutiny is desirable." [see paragraphs 88-91]. As such, it would have been

obvious to one of ordinary skill in the art, at the time of Applicant's invention, to modify

Cole I ('391) to include a spatial distortion index. One would have been motivated to do

so because, as suggested by Cole II ('368), users of such a system would surely be

interested in how much (by actual difference or percentage difference) that the value of a

subject property is inflated or deflated versus comparable properties.

As per Claim 13, Cole I ('391), as modified, teaches the method of Claim 12 above.

Further, Cole I ('391) teaches said mortgage application specifies a requested value of the subject real

property [paragraph 35, "declared market value" & paragraph 24, "requested loan

amount"]. However, Cole I ('391) does not specifically disclose said spatial distortion index

(of Claim 12) is compared to a predetermined allowable spatial distortion index to detect fraud in the mortgage application. Regardless, Cole I ('391) <u>does</u> teach the evaluation of "relative differences" between listed ratio data records versus a predetermined allowable limit (e.g. 2%) [see paragraphs 100-107] in its detection of consistent data pertaining to "sales within the same neighborhood of the same property type" [paragraph 101]. As such, it would have been obvious to one of ordinary skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to include the comparison of a spatial index to an allowable index in determining potential fraud. One would have been motivated to do so given that mathematical computations take the subjectivity out of the evaluation for an "objective, independent, controllable risk assessment" [see Cole II ('368), paragraph 3].

<u>As per Claim 14</u>, Cole I ('391), as modified, teaches the method of Claim 1 above. However, Cole I ('391) does not specifically disclose said distortion index includes a temporal distortion index. Regardless, Cole I ('391) <u>does</u> teach the use of "historical sales-related data" of each real property in its fraud assessment [paragraph 33]. Here, Examiner notes that Applicant defines "temporal distortion" as "the percentage change in subject valuation from the prior year, minus the percentage change in the zip code valuation from the prior year" [Applicant's Specification, page 14, lines 2-3]. Practically, Applicant's "percentage" is merely dividing two values {i.e. the subject property current valuation divided by the previous year's valuation and the comparables current median valuation (by zip code) by the comparables previous year's median valuation (by zip code)} to determine how inflated or deflated the subject property and comparable property respectively are versus the prior year. Official Notice is taken that this mathematical

practice is old, well-established and understood by those of skill in the art. Given outliers

and errors common in underlying data [see Cole II ('368), paragraph 25 & 26], one of

skill in the art would also appreciate that medians be used in lieu of averages, (e.g. which

are skewed by outliers). In this vein, Applicant's "percentage change" merely piggybacks

on the spatial distortion idea discussed in Claim 12 to assess how much different the

subject property change (over the last year) mimics comparable properties. Here,

Examiner notes that the point of Cole I ('391), not unlike Applicant's invention, is to

notice these differences whether using the raw value figures in dollars and cents or

ratios/differences/percentages. Applicant's mathematical manipulation is not changing

the substance of the underlying data, it is just putting it into another form. As such, it

would have been obvious to one of ordinary skill in the art, at the time of Applicant's

invention, to modify Cole I ('391) to include a temporal distortion index. One would

have been motivated to do so given that the standardization/normalization of raw data is

common in the mathematical arts. Further, Cole I ('391) expressly assesses the

"[a]mount of difference between the current sale price and the most recent sale price".

[paragraph 34 & 69, "changed significantly"] and Foretich et al ('267) fortifies the

importance of evaluating subject property values versus comparables.

As per Claim 15, Cole I ('391), as modified, teaches the method of Claim 14 above.

Further, Cole I ('391) teaches said mortgage application specifies a requested value of the subject real

property [paragraph 35, "declared market value" & paragraph 24, "requested loan

amount"]. However, Cole I ('391) does not specifically disclose said temporal distortion index

is compared to a predetermined allowable temporal distortion index to detect fraud in the mortgage

application. Regardless, under the logic of Claim 13 above, evaluators assess data against

predetermined limits. [paragraphs 105 & 108, "limit for consistency" & paragraph 77

"LTV" risk policy & paragraph 68, "lenders flip definition criteria"]. As such, it would

have been obvious to one of ordinary skill in the art, at the time of Applicant's invention,

to modify Cole I ('391) to include the comparison of a temporal index to an allowable

index in determining potential fraud. One would have been motivated to do so given that

mathematical computations take the subjectivity out of the evaluation for an "objective,

independent, controllable risk assessment" [see Cole II ('368), paragraph 3].

As per Claim 10, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said distortion index includes a total

distortion index. Regardless, Cole I ('391), as modified, (e.g. as discussed in Claims 12 &

14 above) teaches the use of a spatial index and a temporal index in assessing the

potential of a fraudulent transaction. Here, Examiner notes that the problem to be solved

in Cole I ('391) is to combine multiple sources of information into one, objective

measure of risk when assessing a mortgage application. [see Abstract, "information…to

search for any abnormal situation...[and] flagg[ing] measures...to prevent mortgage

fraud"]. Further, Foretich et al ('267) teaches that proper valuation is dependent on

consideration of "appropriate comparable [properties]" [Abstract]. As such, it would

have been obvious to one of ordinary skill in the art, at the time of Applicant's invention,

to modify Cole I ('391) to include a total distortion index. One would have been

motivated to do so given that both temporal (subject property based) and spatial

(comparable property based) aspects should be taken into account when assessing the value of a property.

As per Claim 11, Cole I ('391), as modified, teaches the method of Claim 10 above. Further, Cole I ('391) teaches said mortgage application specifies a requested value of the subject real property. [paragraph 35, "declared market value" & paragraph 24, "requested loan amount"]. However, Cole I ('391) does not specifically disclose said total distortion index is compared to a predetermined allowable total distortion index to detect fraud in the mortgage application. Regardless, under the logic of Claims 13 & 15 above, evaluators assess data against predetermined limits. [paragraphs 105 & 108, "limit for consistency" & paragraph 77 "LTV" risk policy & paragraph 68, "lenders flip definition criteria"]. As such, it would have been obvious to one of ordinary skill in the art, at the time of Applicant's invention, to modify Cole I ('391) to include the comparison of a total distortion index to an allowable index in determining potential fraud. One would have been motivated to do so given that mathematical computations take the subjectivity out of the evaluation for an "objective, independent, controllable risk assessment" [see Cole II ('368), paragraph 3].

As per Claim 16 & 17, said claims are rejected on the same discussion as in Clams 10 & 12 above respectively. These are duplicate claims.

As per Claims 28, 29, & 30, Cole I ('391), as modified, teaches the method of Claim 24 above. However, Cole I ('391) does not specifically disclose said distortion index includes a (total distortion index or spatial distortion index or temporal distortion index). Regardless, said Claims are an obvious variant of Cole I ('391) as discussed in respective Claims 10, 12, and 14 above.

As per Claim 31, Cole I ('391), as modified, teaches the method of Claim 30 above.

However, Cole I ('391) does not specifically disclose said temporal distortion index is compared

to a predetermined allowable temporal distortion index to detect an unacceptable distorted valuation of the

subject property. Regardless, under the logic of Claim 15 above, it would have been an

obvious variant of Cole I ('391) to utilize a predetermined allowable temporal distortion

index to detect an unacceptable distorted valuation of the subject property. Examiner

notes that such an unacceptable valuation would likely be classified as "abnormal" under

Cole I ('391) and would be suspected as fraud.

As per Claims 39 & 40, Cole I ('391), as modified, teaches the computer readable

medium of Claim 37 above. However, Cole I ('391) does not specifically disclose said

distortion index includes a (spatial distortion index or temporal distortion index). Regardless, said

Claims are an obvious variant of Cole I ('391) under the logic of respective Claims 12

and 14 above and Claim 37 above.

As per Claim 41, Cole I ('391), as modified, teaches the computer readable medium of

Claim 37 above. However, Cole I ('391) does not specifically disclose said temporal

distortion index is compared to a predetermined allowable temporal distortion index to detect the distorted

valuation of the subject property. Regardless, said Claim is an obvious variant of Cole I ('391)

under the logic of Claims 15 and 37 above. Examiner notes that such a "distorted"

valuation would likely be classified as "abnormal" under Cole I ('391) and would be

suspected as fraud.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Combination

A and further in view of Non-Patent Literature document entitled "Home Price Analyzer: Online

Index-Based Residential Property Valuations" (hereinafter HomePrice)

As per Claims 7-9, Cole I ('391), as modified, teaches the method of Claim 1 above.

However, Cole I ('391) does not specifically disclose said historical sales data for property in the

geographic area in which the subject real property is located is based on sales of property in the (ZIP code

or postal city or county) in which said subject real property is located. Regardless, Cole I ('391)

does disclose having "information regarding a number of real properties...includ[ing]

historical sales data" [paragraph 28]. Further, Cole I ('391) teaches said sales data to

include "[a] property address...[and] a neighborhood of [the] property" [paragraph 34].

Lastly, Cole I ('391) discloses the pinpointing of "municipality and neighborhoods" via

GIS". [paragraph 96] In this vein, HomePrice specifically teaches the identification of

properties (of the residential sales records for valuation purposes) via "the same zip+4

level as the property being valued" and contemplates "[c]ounty median sale price". As

such, it would have been obvious to one of ordinary skill in the art, at the time of

Applicant's invention, to modify Cole I ('391) to include historical sales data for property,

based on the sales of property in the zip code, postal city or county of the subject real

property. One would have been motivated to do so given the need for "reliable

residential property valuations" that recognize "area price trends" [Home Price].

Prior Art

The following prior art, made of record but not relied upon, is considered pertinent to applicant's disclosure: Freeman et al (09/862,055) [Pub. No.: 2001/0029477], Dugan (5,857,174), and Applicant submitted NPL: (1) "Quick Value AVM Services: Instant Online AVMs Make for Rapid Decision Making", (2) "FNIS Launches New Tool, HQ Score", (3) LSI Indicator, an LSI Collateral Assessment Solution"

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JOHN D. SCARITO whose telephone number is (571)270-3448.

The examiner can normally be reached on M-Th (7:00-4:30), Alternate F (7:00-3:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Tom Dixon can be reached on (571) 272-6803. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent

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like assistance from a USPTO Customer Service Representative or access to the automated

information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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